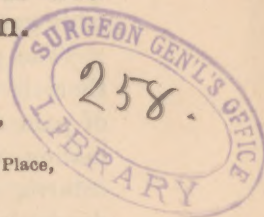


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[Reprint from THE ALIENIST AND NEUROLOGIST, Jan., 1886.]

## On the Relations Existing Between the Digestive System and the Brain.

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THERE is a very intimate connection existing between a man's stomach and bowels and his brain. Neurologists are rather apt to attribute all nervous symptoms directly to disease of the brain or spinal cord, and to apply remedies with this in view. There is a very common condition of depression consisting of a peculiar form of melancholia, the patient's thoughts being only of his bodily ailments. The patient is constantly feeling his stomach and pulse. He broods over his own ailments, but this condition I generally find will disappear on the cure of a gastric catarrh that is present with these symptoms. When we find a patient suffering in this manner, it is safe to suspect that there is something wrong in his abdominal viscera. We shall observe, if the disease has lasted for some time, that the nutrition of the patient has suffered. The fat has disappeared, the muscles have become relaxed, the skin is dry, there is burning in the palm of the hands and the nervous system is, as we have seen, markedly involved. We find simple congestion or chronic congestion of the stomach, with secretion becoming less active and digestion becoming defective. Slowness of the blood current, in any organ of the body, always lessens the nutritive processes. It lessens the supply of oxygen, and we have passive hyperæmia of the organ so affected. It is decidedly rare to find any acute idiopathic inflammation of the stomach or idiopathic gastritis, so we can leave this out of the question in our patients, unless we have reason to think that they have been taking some corrosive poison. We shall find, rather frequently, how-

*presented by the author —*

ever, that our patient's nervous condition depends upon a subacute inflammatory process or gastric catarrh, or inflammatory dyspepsia. We might confound gastralgia with gastritis, but there are marked points of distinction.

The pain in gastralgia comes in paroxysms generally, there is no vomiting, or very rarely, and there is absence of pain on pressure. The condition of subacute inflammation of the stomach, chronic gastritis or gastric catarrh, which gives rise to the nervous symptoms of depression and melancholia before referred to, differs entirely from the functional varieties of dyspepsia.

Gastric catarrh or inflammatory dyspepsia is an organic, not a functional disease of the stomach. The pathology of this condition is as follows: The mucous membrane becomes more or less opaque and thicker than natural, and it is changed in its color. It is brown, black or gray, due to pigmentary changes which take place in the coats of the stomach. The surface of the mucous membrane may present a mamillated appearance. The tubes become changed; they are less straight and less parallel than in the normal mucous membrane; under the microscope they look mixed up. The stomach often appears fatty and granular owing to the structural trouble. The mouths of the tubes become glued up, as it were, and little cysts form at the bottom of them.

Sometimes solitary glands become enlarged and waste away. Associated with this chronic structural change of the mucous membrane of the stomach, of our nervous invalid, we may find granular kidney. In simple nervous dyspepsia we find no distinct structural change, as in gastric catarrh. We have a loss of power in the muscular coats of the stomach in gastric catarrh. The condition of gastric catarrh consists of engorgement of the mucous membrane, with a copious generation of young cells, abnormal selections and increased detachment of epithelium. The cause of gastric catarrh, or inflammatory dyspepsia, is a diminution of the gastric juice which favors decomposition of the food taken into the stomach. If



there is more food taken into the stomach than there is gastric juice to dissolve it, there will be decomposition and fermentation set up. This induces hyperæmia and an abundant flow of mucus, which neutralizes what little gastric juice there is present. There is no use in feeding any patient beyond his power of assimilation. The secretion of gastric juice is very much under the influence of the nervous system and depressing emotions caused by business reverses, or domestic trouble and grief, often is the starting point of a diminution of the gastric juice which eventuates in gastric catarrh, and the secondary state of depression and melancholia, referred to in the beginning of this paper. Causes also exist in the stomach itself. Large quantities of easily digested food may cause trouble, if there is not sufficient gastric juice to digest it, and small quantities of food, which from its nature is not easily digested, may produce irritation and hyperæmia. Anything that has commenced to decompose before taken into the stomach may produce a like result. There is a physiological hyperæmia produced by food in the stomach, but I refer only to morbid hyperæmia. One of the most common causes of morbid hyperæmia of the stomach is the habitual use of alcohol, especially on an empty stomach or in the morning. It should be a rule to discover whether patient had any liver, heart or circulatory trouble. An obstruction in the portal vein may keep the stomach in a constant state of hyperæmia.

The symptoms of gastric catarrh, or inflammatory dyspepsia, causing melancholia, are very similar to those of ordinary indigestion. There is loss of appetite, sense of weight and fullness in the region of the stomach, perhaps vomiting, and a generally perverted condition of the gastric secretion. It now becomes necessary to make a diagnosis between gastric catarrh or inflammatory dyspepsia, and ordinary nervous dyspepsia. The patient suffering from gastric catarrh has probably had the disease a long time. The symptoms are never absent, but are permanent. Permanence of the symptoms distinguishes chronic indigestion

from functional indigestion. In gastric catarrh the patient suffers from distress soon after eating. In functional disorder the patient often feels better after taking food. Functional difficulty is often relieved by stimulants, while in structural trouble the stimulants burn the stomach at once. In structural trouble the pain is relieved when the stomach is empty; in functional dyspepsia the stomach feels worse when it is empty. In gastric catarrh the smallest piece of bread will often cause severe pain.

The tongue in gastric catarrh is broad, flabby, and has an unpleasant odor. The condition of catarrh may extend to the upper part of the small intestine.

We may see a gastric duodenitis. This may extend up into the bile ducts and produce bilious disorders. The inflammation in gastric catarrh may extend to other viscera, and the liver, kidneys and spleen may become involved. Stricture at the pyloric orifice may occur from simple hypertrophy of the mucous membrane. Should this occur, there will be great distension of the stomach with vomiting. Gastric catarrh is very often overlooked and treated merely as a functional derangement of the stomach, and it is very important not to make any such mistake.

In the treatment of gastric catarrh we must give the stomach rest. The less medicine the better for the patient; harsh purgatives should never be given. All starchy and farinaceous food must be omitted. Tender brown meats, that are thoroughly masticated and taken in moderate quantities, will be the most beneficial. Aside from a meat diet, an exclusively milk diet is good with lime water to drink with a little salt in it. Keep the patient on this diet for three weeks, after which stale bread, eggs, soft boiled rice, mutton chops, etc., may be given. Fresh buttermilk is an admirable drink for these patients. If there is tenderness over the epigastrium, heat may be applied, and if it continues, counter irritation in the form of a few small blisters may be required. Keep the bowels open by enemas of warm water and soap suds. As to medicines, the alkaline carbonates lessen



the toughness of the mucous membrane. The bi-carbonate of soda or phosphate of soda is excellent. We may give 10 grs. of bi-carbonate of soda in a half tumbler of water, putting in a pinch of chloride of sodium. Give this half an hour before breakfast and other meals. This increases the secretion of the gastric juice. Or we may use the natural alkaline water before meals. In patients of full habit, I have found it excellent practice to give a teaspoonful of epsom salts in half a tumbler of water with a little salt in it every morning, for several days, or a week or two. When the bowels are constipated give warm enemas and not cathartics. There is one very valuable remedy for atony of the mucous membrane of the stomach, ipecac. Given in small doses it has a very beneficial effect in this disease. From one to three drops of the tincture will often result in rapid pouring out of healthy gastric juice. The sub-nitrate of bismuth has an excellent local sedative effect, and small doses of morphia may be combined with it, if thought desirable. After the inflammation has ceased, we may put the patient on an improved diet and tonics. A little nux vomica with hydrochloric acid is an excellent tonic. One drop of Fowler's solution is often of great benefit in gastric catarrh which results from alcohol, where the patient has morning sickness. This should be given before meals. The great majority of patients with gastric catarrh are drugged too much, and no due attention paid to proper diet. Mental troubles and distress are very apt to produce atonic dyspepsia or functional trouble, but very rarely operate in the production of true structural troubles as we have seen, except, perhaps, in the first link of the chain by arresting the flow of gastric juice. On general principles, a cheerful state is decidedly favorable to the gastric secretion and vice-versa. If the secretions of the liver are perverted, we may also find patients mentally despondent, with dull pain over the right hypochondriac region. In these cases we must regulate the food and give saline purgatives in the morning.

A large number of cases of hypochondriasis we shall find associated with duodenal or intestinal dyspepsia. This is manifested by a sense of weight and uneasiness, not unfrequently felt, in the right hypochondriac region. The disturbance is felt some time after eating food. The duodenum and liver are involved. The most common cause of this is in the inability of the stomach to bring about the requisite changes in the food, so that the food pouring into the duodenum is unfit for digestion in the duodenum. This produces irritation, and this irritation is transmitted to the liver. This form of dyspepsia and the resulting hypochondriasis demand a special line of treatment. Small doses of hydrargyrum with small doses of ipecac in the morning is, I think, the best treatment. Horseback riding is good for these patients. Continual exercises of the brain in brain-workers brings about indigestion very frequently, and rest and recreation is what this class of nervous invalids need. Finally, in women who are nervous invalids, I often find that disorders of the sexual system, uterus and ovaries, produces disorders of the stomach through the nervous system, which disappear when the chronic affection of the uterus is cured. We should see that our patient has no bad teeth. The stomach should never be filled to an uneasy sense of repletion. There should be no exercise taken immediately after a meal. There should be certain hours intervening between meals. If certain food does not agree with a patient, he must avoid its use. Patients should be kept well nourished, and not kept on a low weak diet.



